Intermountain Region
GRIM Team
IMS Project Plan

August 15, 2006

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Project Goal

Utilize Internet Map Service (IMS) software and the Geographic Resource Information Management (GRIM) Team expertise to develop, host and deliver GIS maps with limited GIS functionality from regional office.

Project Scope

The project will be accomplished in three primary phases:

Phase I – A discovery phase to evaluate software and solutions available – This phase was completed in March 2004.

Deliverables for Phase I:

1. Test various software solutions
2. Pilot park to test solutions (Trail of Tears project)
3. Solution/Software Decision
4. Initial hardware and software implementation

Phase II - As a proof-of-concept, complete ArcMap IMS conversion of the 16 standard parks already served on GRIM GIS website.

Deliverables for Phase II:

1. Regionally hosted ArcMap IMS server with existing 16 parks converted
2. Consistently defined, and web published, symbol palettes and map templates that meet the needs of the NPS
3. Marketing plan for the parks emphasizing 'ease of use', benefits and cost relationships
4. Communication plan to keep parks informed on progress and changes
5. Discussion and implementation of a Change Management Process

Phase III - Phase III of this project will involve expanding the visibility and ultimately the implementation of the IMS project to additional parks, programs, and regional focus areas. Feeding into the Phase III, will be the Marketing plan and the results of Phase I and II. We will need to evaluate if Phase III will be a continuation of this project, an initiation of a new project, or a movement to an ongoing process improvement plan.

Deliverables for Phase III:

1. 'Setup new Parks' task. The task combined with the Marketing approach to sign up new parks will eventually become a process.
2. A Regional IMS for small scale regional data; examples include Wilderness Areas, CESUs, Congressional Districts, etc.
3. Special needs maps to handle specific project/program request not covered by the existing implementation (Mexican Spotted Owl, RTCA).

Objectives

- To make GIS data more accessible to NPS employees and the public
- To allow IMS Users to create custom views and maps
- To print custom views/maps

Constraints

- IMS server in the DMZ will not become overloaded
- Park connections are sufficient to allow them to interact with ArcMap IMS tools
- IMS tool will not allow analysis of GIS data as viewsheds, buffers, merging of data, etc.
- IMS tool will not allow immediate upload of your GPS data into the IMS. GPS and GIS Data must be processed through the GIS offices and then could be prepared for upload to IMS site
- All IMS data used must have metadata where applicable

Assumptions

- We have available staff and computer resources to serve GIS data via IMS
- Parks will be willing to fully participate in this IMS to enable 'best-of-class' approach
- The Microsoft Terraserver URL and database (terraserver.microsoft.com) used to provide imagery via a live link is available.

Team Management Plan

The team working on this project will consist of GRIM Team members and will accommodate project schedules in relation to priorities set by the GRIM Team Supervisor.

Communications Plan

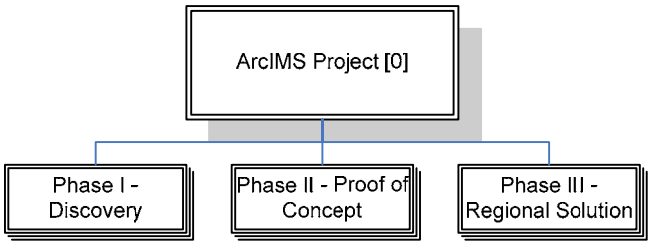
1. Internal 'Status of Parks' communication is handled by the following methods:
   - The tracking spreadsheet maintained by Paul Voris – Phase II (N:\GIS\administration\IMS_SDE_plans\IMS_Status)
   - GRIM Team Technical Assistance Database – Phase III requests (http://dino.den.nps.gov/techasst_new/)

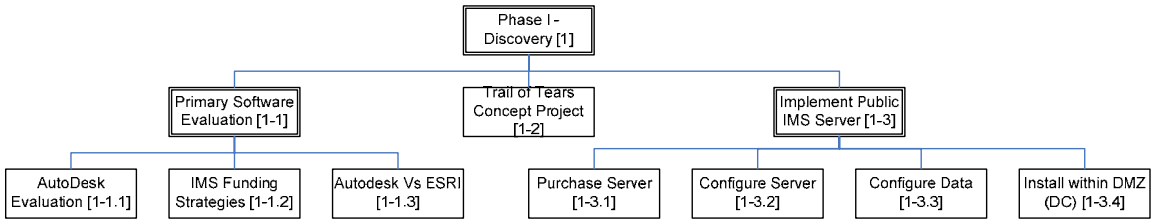
2. An external communication plan will be developed as a 'Marketing Plan.'

3. An IMS technical information web page link has been provided from the GRIM web page to allow distribution of the following information concerning IMS: (http://imgis.nps.gov/technical_information.html)
   - Project Documentation (Project plan, IMS data flow)
   - Marketing Documentation (Marketing Plan, Marketing Presentation, Brochure)
   - User Information (IMS User Guide, Symbol Palette)
   - Related URL links

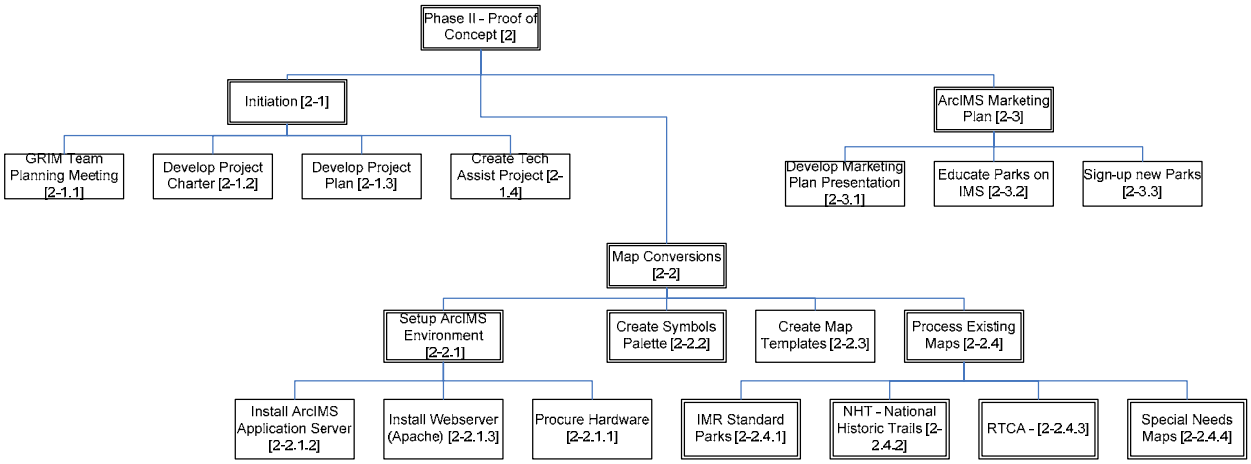
Work Breakdown Structure

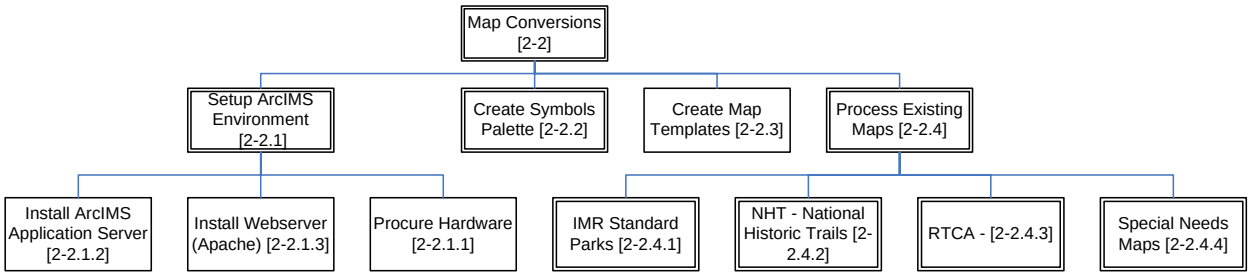
(Each descending level represents an increasingly detailed definition of the project work.)



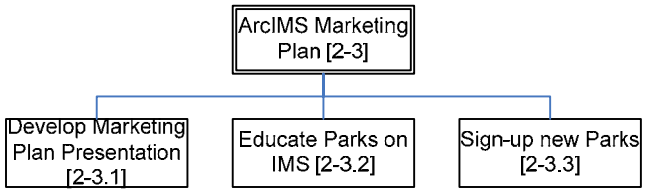


Phase I of the project was a discovery phase that concentrated on evaluation, feasibility and initial hardware/software configurations.



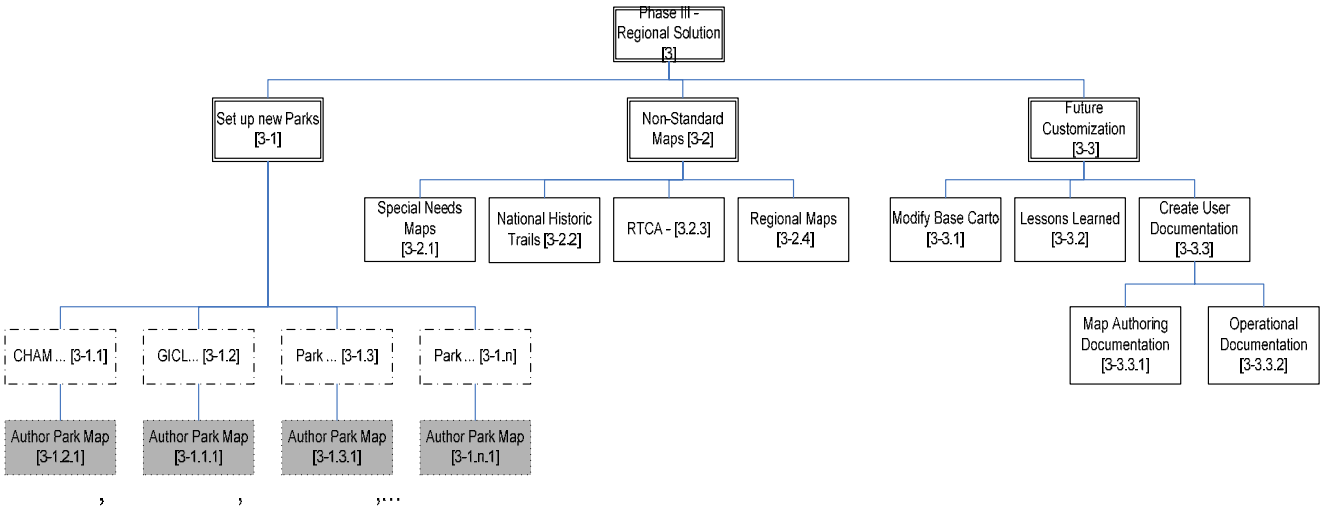


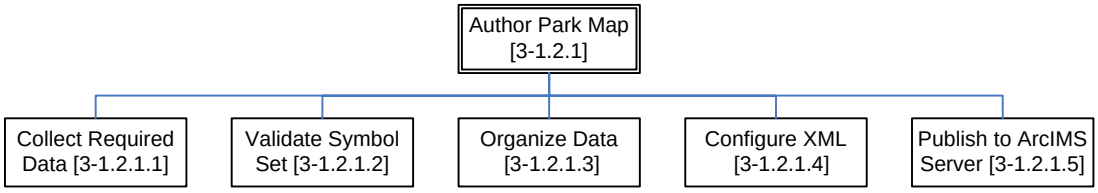
(Map Conversions – 2-2)



IMS Marketing Plan 2-3)

Phase II of the project is nearly complete. Several aspects of the IMS task [2.3] will roll into, and may actually be part of, Phase III





(Author Park Map 3-1.2.1)

Phase III of the IMS project is detailed on page 3 of this document.

Project Schedule

NOTE: Please refer to project schedule in MS Project for current status at this location: N:\GIS\administration\IMS_SDE_plans\IMS\ArcIMSProject-Project-Schedule.html

ID	Task Name	Duration	Start	Finish	Resource Names
1	**Phase I - Discovery Phase**	**1349 days?**	**Fri 9/1/00**	**Wed 11/2/05**	
2	**Primary Software Evaluation**	**327 days**	**Fri 9/1/00**	**Mon 12/3/01**	
3	AutoDesk Software Evaluation	1 day	Fri 9/1/00	Fri 9/1/00	Team
4	IMS Funding Strategies	1 day	Sat 12/1/01	Mon 12/3/01	Theresa
5	Autodesk Vs ESRI	1 day	Sat 12/1/01	Mon 12/3/01	Team
6	Trail of Tears Concept Project	2 days	Tue 11/1/05	Wed 11/2/05	Paul
7	**Implement Public IMS Server**	**611 days?**	**Tue 7/1/03**	**Tue 11/1/05**	
8	Purchase Server	22 days	Tue 7/1/03	Wed 7/30/03	Paul,Theresa
9	Configure Server	22 days?	Fri 8/1/03	Mon 9/1/03	Paul
10	Configure Data	1 day?	Tue 11/1/05	Tue 11/1/05	Team
11	**Setup ArcIMS Environment**	**22 days**	**Fri 8/1/03**	**Mon 9/1/03**	
15	Install within DMZ (DC)	1 day?	Mon 3/1/04	Mon 3/1/04	Paul
16	Preliminary Trails Pilot	89 days?	Sat 5/1/04	Thu 9/2/04	Vicki,Paul
17	**Phase II - Proof of Concept**	**501 days?**	**Thu 7/1/04**	**Thu 6/1/06**	
18	**Initiation**	**446 days?**	**Thu 7/1/04**	**Thu 3/16/06**	
23	**Map Conversions**	**163 days?**	**Tue 10/18/05**	**Thu 6/1/06**	
24	**Create Symbols Palette**	**1 day?**	**Fri 3/17/06**	**Fri 3/17/06**	**Vicki**
25	Publish Symbols to Website	1 day?	Fri 3/17/06	Fri 3/17/06	
26	Create Map Templates	1 day?	Fri 3/17/06	Fri 3/17/06	
27	**Process Existing Maps**	**163 days?**	**Tue 10/18/05**	**Thu 6/1/06**	
28	**IMR Standard Parks**	**163 days?**	**Tue 10/18/05**	**Thu 6/1/06**	
45	**Special Needs Maps**	**1 day?**	**Fri 3/17/06**	**Fri 3/17/06**	
46	Mexican Spotted Owl	1 day?	Fri 3/17/06	Fri 3/17/06	Melanie,Ben
47	**ArcIMS Marketing Plan**	**57 days?**	**Wed 3/15/06**	**Thu 6/1/06**	
48	Develop Marketing Plan Presentation	2 days	Wed 3/15/06	Thu 3/16/06	Theresa,Team
49	Educate Parks on IMS	16 days?	Mon 4/10/06	Mon 5/1/06	Theresa
50	Sign-up new Parks	39 days?	Mon 4/10/06	Thu 6/1/06	Team
51	Develop Marketing Brochure	3 days	Mon 3/27/06	Wed 3/29/06	Ben,Kevin,Theresa
52	Marketing Power Point	2 days	Wed 3/22/06	Thu 3/23/06	Kevin
53	**Phase III - Regional Solution**	**1459 days?**	**Mon 10/2/00**	**Thu 5/4/06**	
54	**Set up new Standard Parks**	**13 days?**	**Thu 3/16/06**	**Mon 4/3/06**	
84	**Setup Non-Standard Map Categories**	**1437 days?**	**Mon 10/2/00**	**Tue 4/4/06**	
85	**Special Needs Maps**	**1 day?**	**Mon 10/2/00**	**Mon 10/2/00**	
88	**NHT - National Historic Trails**	**2 days**	**Mon 4/3/06**	**Tue 4/4/06**	
93	**RTCA - River Trails Conservation Assistance Pr**	**2 days**	**Mon 4/3/06**	**Tue 4/4/06**	
96	Regional Level Maps	1 day?	Mon 10/2/00	Mon 10/2/00	
97	**Future Customizing and Process Improvements**	**24 days?**	**Mon 4/3/06**	**Thu 5/4/06**	
98	modifying Base Carto with shaded relief and/or PLSS	1 day?	Mon 4/3/06	Mon 4/3/06	
99	Create Lessons Learned	1 day?	Thu 4/6/06	Thu 4/6/06	Kevin
100	**Create User Documentation**	**4 days**	**Mon 5/1/06**	**Thu 5/4/06**	

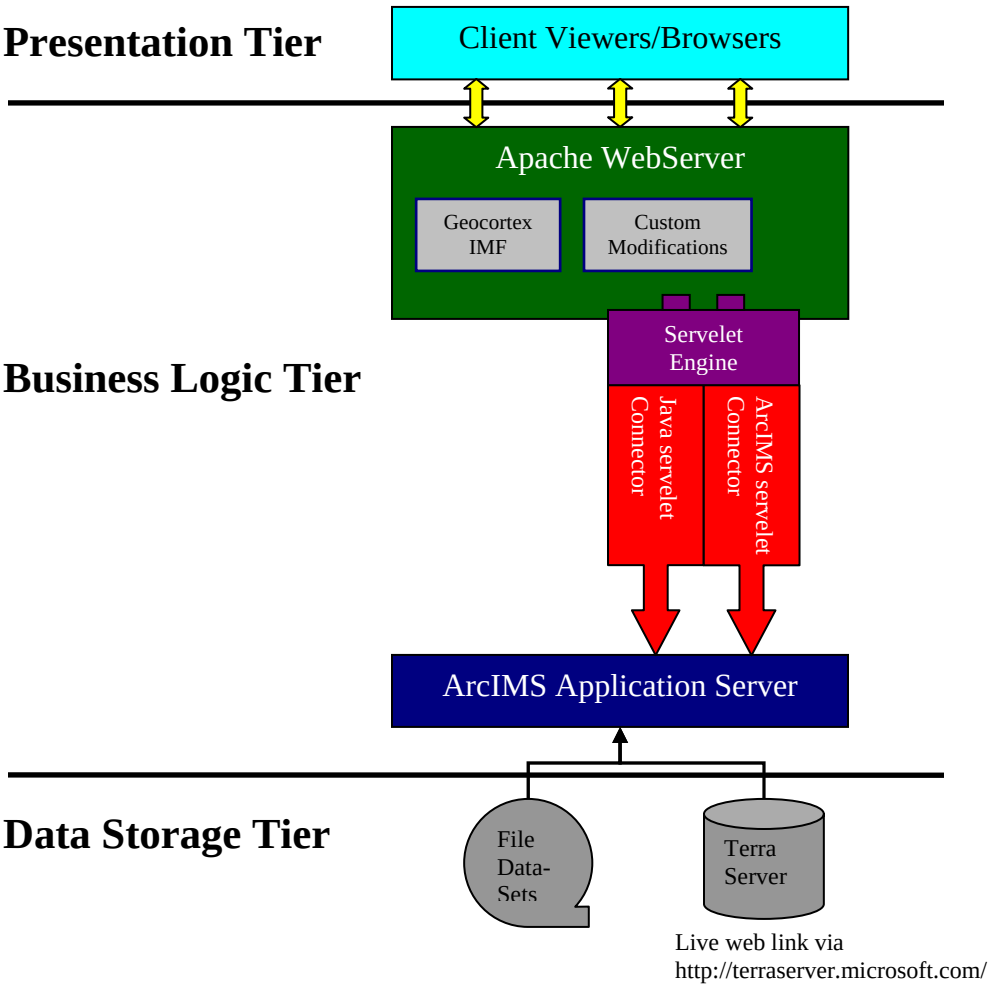
Role and Responsibilities Matrix

Responsibility / Roles	Approvals	Hardware	IMS Configuration	Map Standards	Author Maps	Quality Control	Marketing Plan	Feedback Loop
Supervisor	**R**			**R**	**R**		**A**	**A**
GIS Lead			**P**	**P**	**P**		**I, P**	
IT Specialist		**R**	**A**	**P**	**P**		**I, P**	**R**
GIS Specialist				**A**	**A**	**R**	**I, P**	
QC Reviewer						**A**		
Parks/Customer		**I**		**I**	**I**		**P**	

R – Responsibility for Signoff
A – Accountable (Performing Work)
P – Participating (Team Member)
I – Influence

- **Approvals** – Provides general project signoff and approves changes to project that impact the project scope or schedule.
- **Hardware** – Responsible for overseeing hardware installation, operation, and required maintenance
- **IMS Configuration**– Configures Web and application servers and all supporting components.
- **Map Standards** – Validates consistent and complete symbology, metadata rules, and map templates are published and followed.
- **Author Maps** – Creates Park maps and supporting XML configuration files with consistent map standards and publishes completed maps to the IMS server.
- **Quality Control** – Review Maps to ensure compliance with GRIM IMS standards and consistent visual presentation is maintained.
- **Marketing Plan** – Prepares and presents IMS presentations to potential customers in with the intent to expand the IMS program.
- **Feedback Loop** – Gathers feedback and incorporates this feedback into the overall project modifications or educates client (i.e. helps client understand scope, design and standards).

Infrastructure and Architecture



Risk Management

Date Identified	Area of Risk	Description	Impact	Strategy for Mitigation	Current Status	Owner
3/13/06	Staff Resource Transitions	Staff transitions are removing knowledge and time resources from project	High	Develop User Documentation	In Progress	Melanie, Kevin
3/13/06	Park Standard Portrayal	As Parks are added there is potential to diverge from standard look and feel	High to Medium	Document and Enforce Symbol and Map Standards. Publish Symbol Palette on Web	Part of Project Plan	Vicki
3/21/06	Terraserver Imagery	The Microsoft TerraServer URL and database used to provide imagery is an external resource beyond control of project or NPS (terraserver.microsoft.com)	High	Cooperative Research development agreement between USGS and Microsoft	Project Maps that use the TerraServer images will fail to work if Microsoft server is down	Paul, Kevin
5/12/2006	Server Failure	Server failure due to component failure	High	Server is supported by DMZ Staff; who will be able to report and resolve server issues.	Some downtime is required if parts need to be ordered	Paul, DMZ
5/12/2006	Data Loss	Data loss due to disk failure	High	Server is backed up by DMZ Staff	Resolved	Paul, DMZ

Software and Hardware License Management Plan

All software will be configured according to current security specifications to ensure the overall security of the system. All software will be licensed prior to the rollout of the system

Security Management Plan

All software and operating systems will be configured to current security standards and tested prior to rollout of the infrastructure through approved testing processes. In compliance with DOI policy, the server was installed at the National Information and Telecommunications Center in Washington DC.

Change Management Plan

Change Control Board

General changes requested for the IMS project will need be controlled by the IMS Change Control Board (CCB). This board will be defined by the GRIM Team Supervisor (IMS Sponsor).

Activities of the CCB will include:

- Defining the appropriate frequency for CCB meetings
- Define and publish the process for accepting and reviewing Change Requests
- Evaluate Change Request for their value to the IMS implementation
- Continue to set goals and direction for expanding IMS functionality within the program
- Track evolution of ESRI direction with ESRI ArcIMS and GeoCortex IMF software and their impact to our implementation
- Liaison with ESRI and GeoCortex representatives for software improvements and fixes
- Work with GRIM Team resources to define implementation strategy for completing Change Requests within established release management processes

Release Management Plan

The IMS project will utilize established GRIM Team Release Processes to reduce negative impact to the IMS Project.

The GRIM Team Release Processes will include:

- NPS Source code modifications are documented and under version control
- Application upgrades and patches will be evaluated for their impact to GRIM Team's IMS implementation.
- ESRI and GeoCortex contacts are notified of any application issues immediately.
- Releases are tested and approved at multiple levels;
    - Unit testing
    - Integration testing
    - Regressive testing
    - User acceptance testing
- IMS release components are combined into release packages to allow releases to be scheduled at specific controlled intervals, as determined by the IMS CCB, to reduce downtime and negative impact to the user community

Approval of Project Plan

/s/ Kevin Johnson_____ 06/15/2006

/s/ Theresa Ely_____ 06/15/2006

Version Control Log

Date	Version #	Author	Description
02//06	1.01	Kevin Johnson	Populated and modified ArcIMS project plan
03/21/06	1.02	KJ	Updates from GRIM Team Meeting
04/07/06	1.02	KJ	Minor corrections
5/23/06	1.03	KJ	Updates from GRIM Team walkthrough
06/14/06	1.03	KJ	Minor corrections prior to approval
07/24/06	Public	Kj	Converted for Public version